

M2 CUMMINS ALLISON NO CRANK



ADAM KEEP 2 posts since Jun 6, 2019

M2 CUMMINS ALLISON NO CRANK Dec 29, 2020 6:39 PM

SERIAL # JB3069

DOING A WRITE UP FOR THIS ONE AS THERE WAS NO REAL HELP OUT THERE FOR A NO CRANK ON THIS M2 CUMMINS ALLISON SETUP.

SO THE SHORT STORY, CUSTOMER STATER TRUCK INTERMITTENTLY HAS NO CRANK. TECH WAS ABLE TO SUCCESSFULLY CRANK AND CONNECTED DL TO VIEW STATUS. SAW CRANK SIGNALS FROM IGNITION INPUTS TO BHM AND OUTPUT FROM BHM B4.B WITH NO LOAD SHOWING IN OUTPUT.

AAVA Solenoid Circuits	AC Clutch Function	AMU Solenoid Circuits	AMU Solenoid Circuits	Backup Function (Automatic Transmission)	Bulkhead Module Connector 1	Bulkhead Module Connector 2	
Chassis Module, Connector 2	Chassis Module, connector 3	Chassis Module, Connector 3	Chassis Module, Connector 4	Cigar Lighter Function (12V)	Clutch Switch Function	Dome Light Function	Hazard Lights Function
headlight system function	Horn (Electric) Function	Ignition system, accessory power function	Ignition system, ignition power function	Marker Lights Function	Smart Switches M2 w/BHM v6.1 Only		
Stoplights Function	Turn Signal Function	Windshield Wiper-Washer System	Windshield Wiper-Washer System				
Windshield Wiper-Washer System, Washer Motor Functions	Windshield Wiper-Washer System, Washer Pump Functions	Windshield Wiper-Washer System, Wiper Motor Functions					
Bulkhead Module Connector 3	Bulkhead Module Connector 4	Bulkhead Module Connector 5	Bulkhead Module Connector 6	Bulkhead Module Smart Switches	Chassis Module, connector 1		

Bulkhead Module Connector 4		APPLIES TO:		ENTER TEST MODE		EXIT TEST MODE	
TEMPLATE VER. 1.2, 2/15/08		Business Class M2		OFF		OFF	
B4.A Input Air Filter Restriction	Status OFF	B4.H Input Wake Up	Status ON	ON	OFF		
B4.B Output Starter Relay	Status ON	B4.K Power Battery Power 4	Volts 12.52	ON			
B4.D Input Spare Digital Input 2	Status OFF	B4.L Input Washer Level	Status OK				
B4.E/B4.F Output Right and Left Heated	Status OFF	B4.M Output Utility Light/Spotlight	Status OFF	0.00	ON	OFF	OFF
B4.G Power Battery Power 2	Volts 12.62			ON			
	ON						

Pin C is Ground, Pin J has no function.

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All Instruments	Chart	Backlighting Function	BHM Starter Controls	Bulkhead Module Battery Inputs - M2	Cascadia J1939 Datalink Test
Chassis Module Battery Inputs - M2	Fire Pump Interlocks	headlight system, headlight switch function	ICU3 - EPA 2010 Instrumentation Data	ICU3 M2 J1939 Telltales	
M2/C2 Smart Switch Configuration	Park Brake Function	PTO Interlocks	Switch Expansion Module #1, connector J1	Switch Expansion Module 1, Smart Switches	User
Ignition system, ignition power function	Low Air Pressure Warning Function	M2 - Wake Function	M2 Cruise Control Function - Multiplexed Only	M2 Starter Control Neutral Inputs	

Ignition system, ignition power function
 TEMPLATE VER. 1.1, 02/20/07

APPLIES TO:
 M2 with V.6.5
 ALL C2 BUS BHM

i

EXIT TEST MODE

OFF

Inputs to BHM:
 Ignition Switch to BHM:
 Ignition Switch Position Circuits
 ACC Circuit
 ON Circuit
 CRANK Circuit

Outputs from BHM:
 From BHM to Outputs:
 Ignition Switch Position
 ACC OFF
 ON CRANK

Test Mode is not needed for this template. If the Test Mode annunciator is ON, please press the Exit Test Mode button.

AFTER TESTING ALL OUTPUT AT B4.B AND FOUND NO VOLTGE OUTPUT FROM BHM AND TESTING STARTER RELAY AT B4.B AND WAS ABLE TO CRANK AND RUN BY APPLYING 12VDC TO B4.B WIRE, BHM WAS REPLACED. THIS DID NOT CORRECT THE PROBLEM. SO... VIEWING THIS TAB IN DL,

Chassis Module Battery Inputs - M2	Fire Pump Interlocks	headlight system, headlight switch function	ICU3 - EPA 2010 Instrumentation Data	ICU3 M2 J1939 Telltales
Ignition system, ignition power function	Low Air Pressure Warning Function	M2 - Wake Function	M2 Cruise Control Function - Multiplexed Only	M2 Starter Control Neutral Inputs
M2/C2 Smart Switch Configuration	Park Brake Function	PTO Interlocks	Switch Expansion Module #1, connector J1	Switch Expansion Module 1, Smart Switches
All Instruments	Chart	Backlighting Function	BHM Starter Controls	Bulkhead Module Battery Inputs - M2
				Cascadia J1939 Datalink Test

Position
 ACCESSORY
 ON/RUN
 ACTIVE
 CRANK
 ACTIVE
 Ignition Voltage
 Not available

Power Circuits - Status
 ACC OFF
 ON CRANK
 Crank Circuit Amperage
 09:58:10:000

BHM Starter Controls
 Pin B0.B5 Bottom of Clutch
 BOC Inactive
 Pin B6.B2 Top of Clutch
 TOC Inactive
 Pin B2.G Neutral Start
 ENGINE CRANK DISABLED
 Engine RPM
 09:58:10:000

ENGINE CRANK ENABLED
 Neutral Status From AGS
 ENGINE CRANK ENABLED
BHM Input Circuits AND J1939 Messages DO NOT Apply to all vehicles
 Use EZ-Wiring to access the schematic for the vehicle.
 Crank Enable From Allison Message applies to newer Allison Transmission Vehicles.
 Neutral Status From AGS Message applies to many Mercedes Benz and AGS transmissions.
 Pin B2.G Neutral Start Circuit applies to many older Allison Transmissions.
 Eaton automated transmission vehicles control a relay in the PTPDM to interrupt the crank circuit between BHM output pin

Crank Enable Indicators
 Cranking
 Disabled
 Transmission Temperature RPM Optional
 Allowed Allowed Disable Allowed

NOTICE THE "RPM" DISABLE STATUS IN "CRANK ENABLE INDICATORS". THIS IS THE POINT WHICH THER IS NO CLEAR INFORMATION AVAILABLE AS TO WHAT THIS STATUS COMES FROM. CAC

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STATED THAT "IT IS NOT NECESSARILY A RPM SIGNAL". SO FURTHER DIGGING INTO WONDERFUL E-Z WIRING, TECH WAS ABLE TO FIND A NEUTRAL SIGNAL CIRCUIT AT TCM 80 WAY CONNECTOR PIN 41. DRAWING [G66-02082-002](#) THIS SIGNAL CONTROLS R7 RELAY COIL WHICH THEN SENDS A GROUND THROUGH R7 RELAY CONTACTS TO CHM CONNECTOR 5 PIN A WHICH THEN ALLOWS THE "RPM" CRANK ENABLE TO BE ALLOWED. IN HIS CASE THERE WAS A DAMAGED WIRE, INTERMITTENTLY OPEN, IN THIS CIRCUIT 497F BETWEEN THE R7 RELAY AND CHM. AFTER RUNNING AN OVERLAY FROM R7 RELAY TO CHM C5 A, THE TRUCK CRANKS EVERYTIME.

I HOPE THIS HELPS SOMEONE ELSE AS THE SCHEMATICS AND TEMPLATES CAN BE MISLEADING. I HAVE ATTACHED ALL THE SNAP SHOTS AS WELL.

- [G66-02082_____-.001.pdf](#) 33.4 KB Preview
- [ignition switch status.jpg](#) 119.5 KB
- [crank enable indicators.jpg](#) 181.5 KB
- [b4_b crank no load.jpg](#) 160.5 KB

Tags: neutral start, m2 no crank, crank enable, r7 relay